

**ABSTRACT**

The present invention relates to a titania composite membrane for separating water/alcohol mixtures and a method of preparation thereof, and more particularly  
5 to the titania composite membrane and the method of preparation thereof, wherein a surface of a porous support is modified with silica xerogel and  $\gamma$ -alumina sol and titania sol is coated on the modified surface to form a titania surface layer and then the obtained titania surface layer is dried and calcined to optimize performance of separation and promote thermal stability.

10 The titania composite membrane of the present invention has excellent properties such as thermal stability, mechanical strength and good perm-selectivity for water molecule in water/alcohol mixtures due to the hydrophilic property of the titania surface layer, thus being applicable to the membrane for separating water/alcohol mixtures.